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Education & Training Webinar:

“Alzheimer’s & Brain Awareness”

June 27, 2024

1pm to 2 pm

Welcome

AVIS RICHARD | BUREAU DIRECTOR

BUREAU OF CHRONIC DISEASE PREVENTION AND HEALTHCARE ACCESS

Office of Public Health | Louisiana Department of Health

WELL-AHEAD

Anne L. Foundas, M.D., FAAN

The Brain Institute of Louisiana, Executive Director

Department of Communication Sciences and Disorders at LSU,

Research Professor, and NOLA Brain and Behavior, Managing Partner

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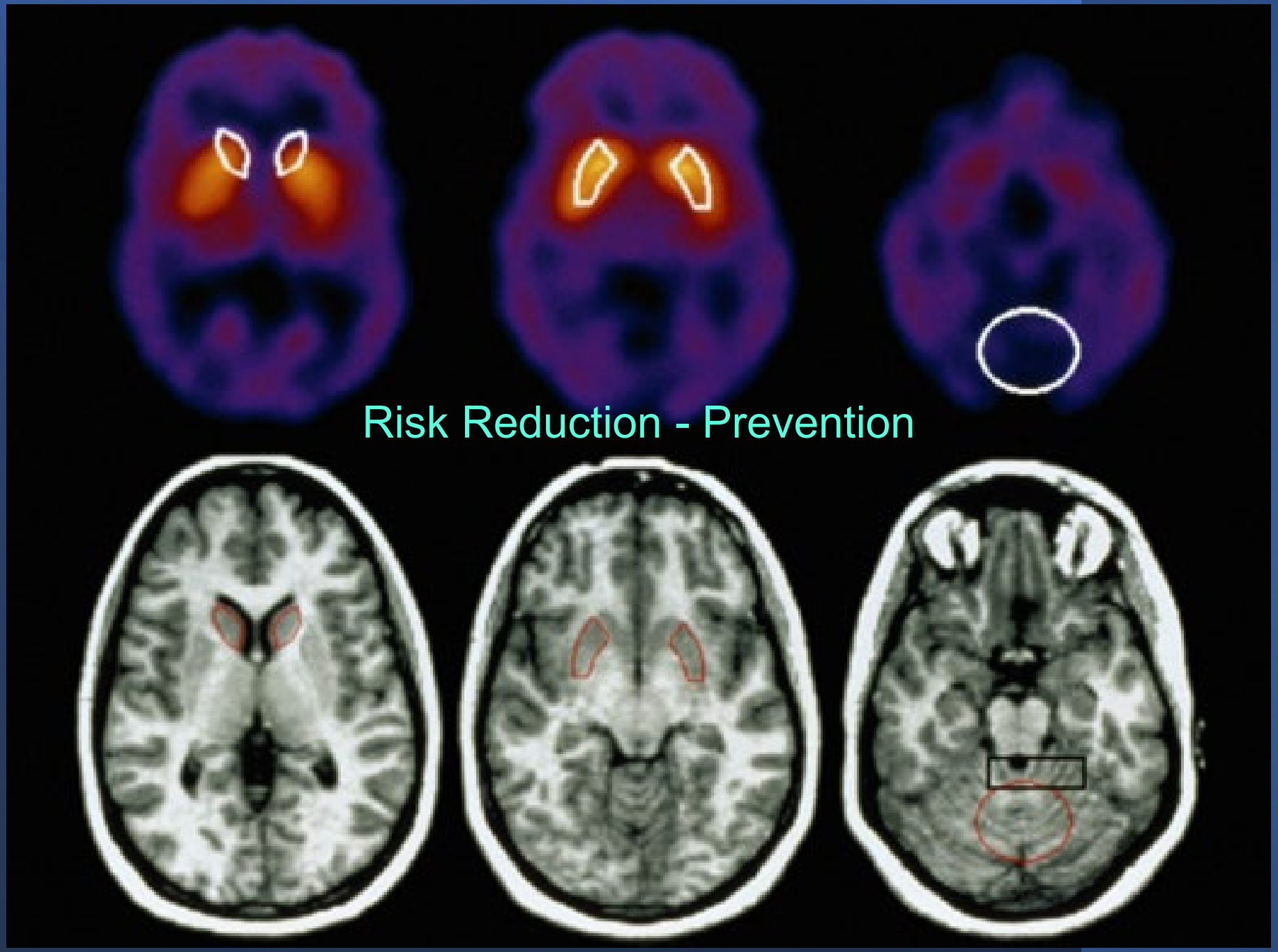
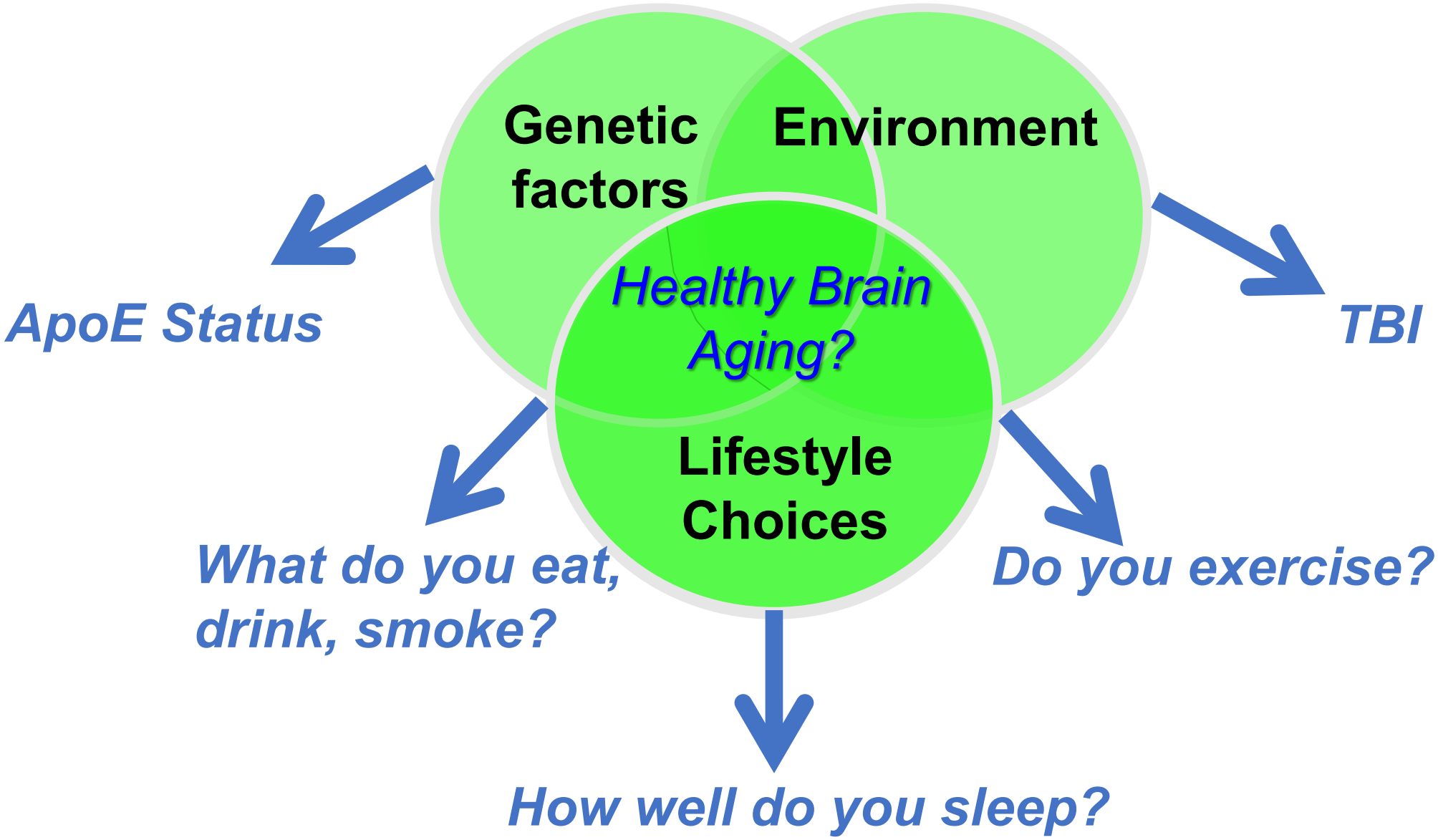
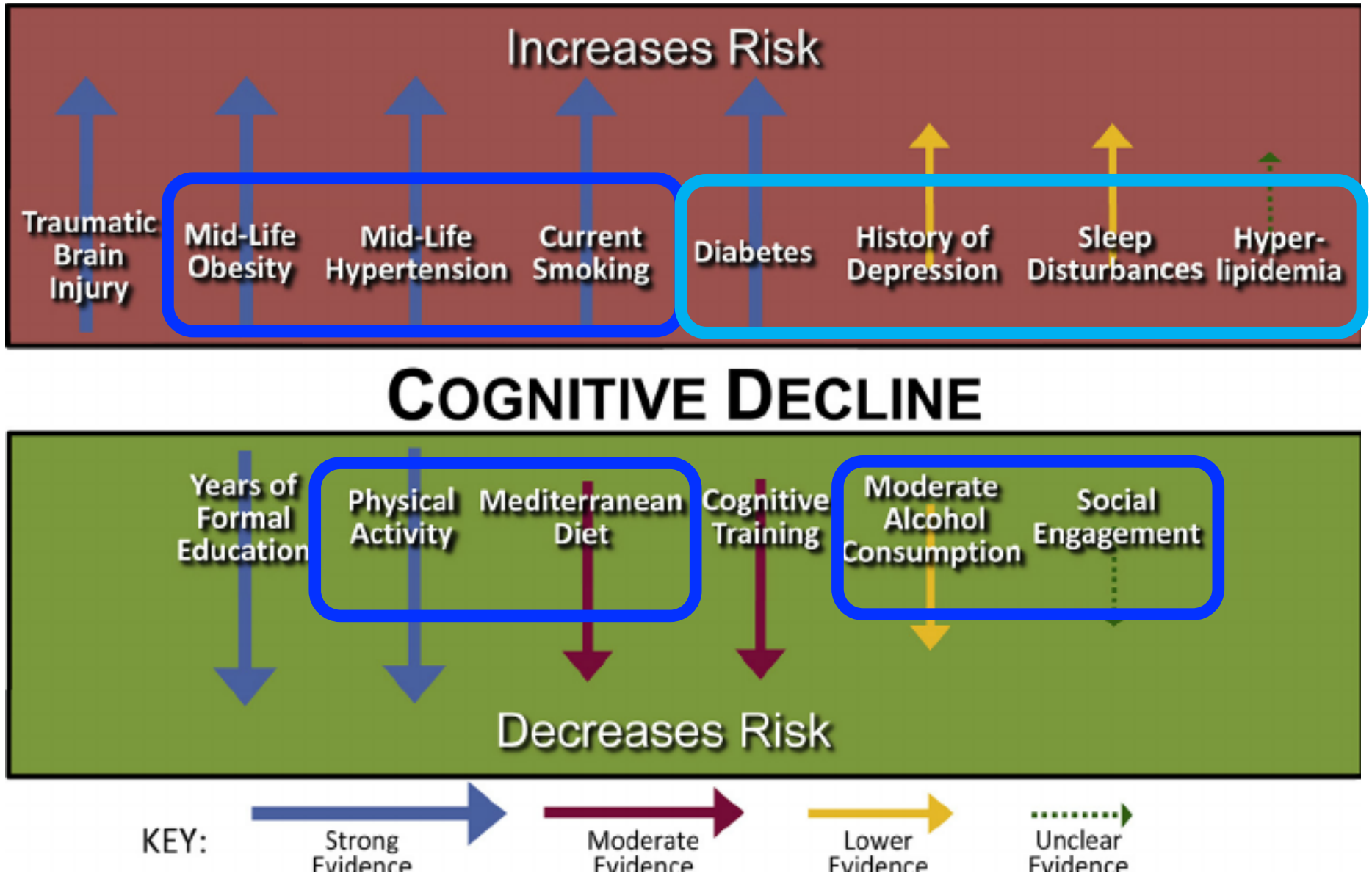

Risk Reduction - Prevention

Healthy Brain Aging: *What can you do?*





Baumgart et al (2015) Summary of the evidence on modifiable risk factors for cognitive decline and dementia: A population-based perspective. *Alzheimer's & Dementia*.

10 HEALTHY HABITS FOR YOUR BRAIN

TAKE CHARGE OF YOUR BRAIN HEALTH. THESE HEALTHY HABITS CAN LOWER THE RISK OF DEVELOPING COGNITIVE DECLINE AND POSSIBLY DEMENTIA. THIS IS TRUE EVEN FOR PEOPLE WITH A HISTORY OF DEMENTIA IN THEIR FAMILIES.

Follow as many of these tips as possible to achieve the most benefits for your brain and body. It's never too late or too early. Start now!

Protect your head

Help prevent an injury to your head. Wear a helmet for activities like biking, and wear a seatbelt. Protect yourself while playing sports. Do what you can to prevent falls, especially for older adults.

Be smoke-free

Quitting smoking can lower the risk of cognitive decline back to levels similar to those who have not smoked. It's never too late to stop.

Get moving

Engage in regular exercise. This includes activities that raise your heart rate and increase blood flow to the brain and body. Find ways to build more movement into your day — walking, dancing, gardening — whatever works for you!

Challenge your mind

Be curious. Put your brain to work and do something that is new or hard for you. Learn a new skill. Try something artistic. Challenging your mind may have short- and long-term benefits for your brain.

Control your blood pressure

Medications can help lower high blood pressure. And healthy habits like eating right and physical activity can help too. Work with a health care provider to control your blood pressure.

Manage diabetes

Type 2 diabetes can be prevented or controlled by healthier eating, increasing physical activity and medication, if necessary.

Sleep well

Good quality sleep is important for brain health. Stay off screens before bed and make your sleep space as comfortable as possible. Do all you can to minimize disruptions. If you have any sleep-related problems, such as sleep apnea, talk to a health care provider.

Stay in school

Education reduces your risk of cognitive decline and dementia. Encourage youth to stay in school and pursue the highest level of training possible. Continue your own education by taking a class at a local library, college or online.

Eat right

Eating healthier foods can help reduce your risk of cognitive decline. This includes more vegetables and leaner meats/proteins, along with foods that are less processed and lower in fat. Choose healthier meals and snacks that you enjoy and are available to you.

Maintain a healthy weight

Talk to your health care provider about the weight that is healthy for you. Other healthy habits on this list — eating right, physical activity and sleep — can help with maintaining a healthy weight.

Learn more at alz.org/healthyhabits.

ALZHEIMER'S ASSOCIATION

RISK REDUCTION

What does the research show?

- **Diet**
- **Exercise**
- **Sleep**
- **Stress Reduction**
- **Social Engagement**
- **Learn New Things**

10 Healthy Habits is available in English and Spanish

Sleep

Sleep & Alzheimer's Disease

Role of the Glymphatic System

This process helps clearance of waste substances and other materials out of the central nervous system

Sleep modulates the glymphatic system

Aβ concentrations in the brain's extracellular milieu fall during sleep and rise during wakefulness

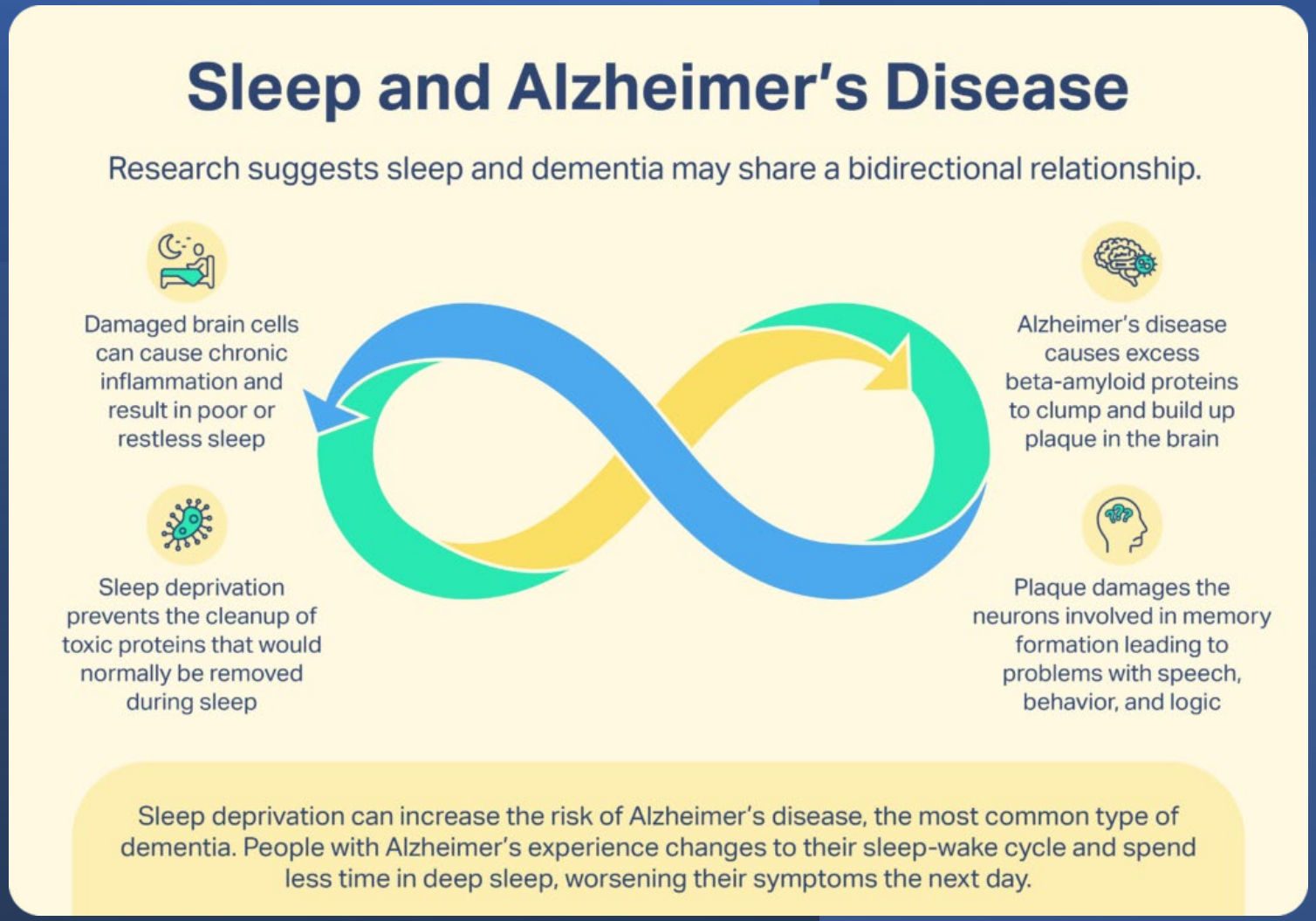
Glymphatic flow may help remove soluble extracellular Aβ peptide from the brain

Sleep disruptions can interfere with this process and thus increase the deposition of toxic soluble extracellular Aβ, the primary molecular species that accumulates in amyloid plaques

References:

Shenker JI, Singh G. Sleep and Dementia. Mo Med. 2017 Jul-Aug;114(4):311-315.

Wong R, Lovier MA. Sleep Disturbances and Dementia Risk in Older Adults: Findings From 10 Years of National U.S. Prospective Data. Am J Prev Med 2023;64(6):781−787.



Source: Fry A, Rehman A. Dementia & Sleep. Updated 11-16-2023

https://www.sleepfoundation.org/mental-health/dementia-and-sleep

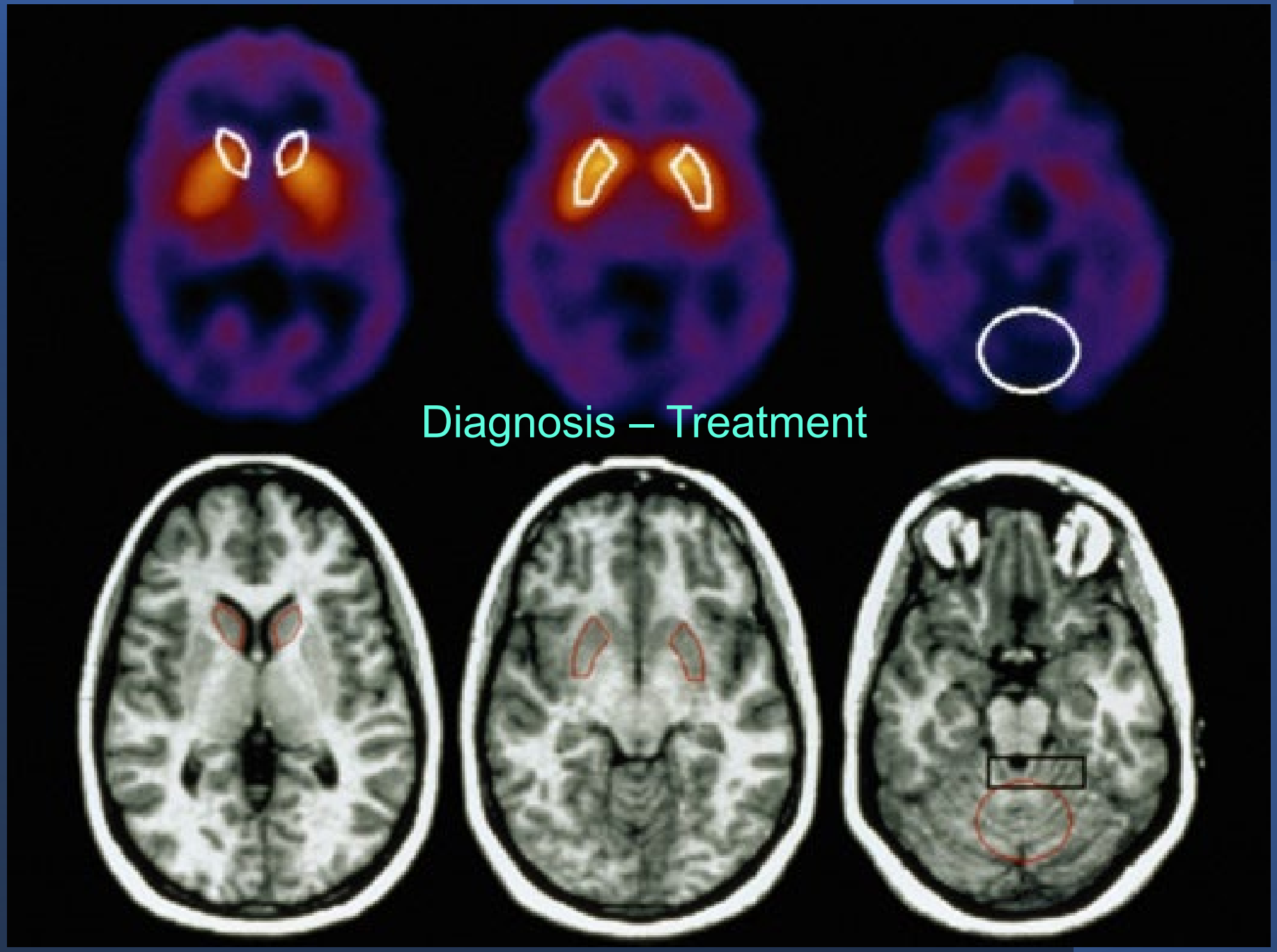
SUMMARY

Lifestyle
- Diet & Exercise
- Moderate

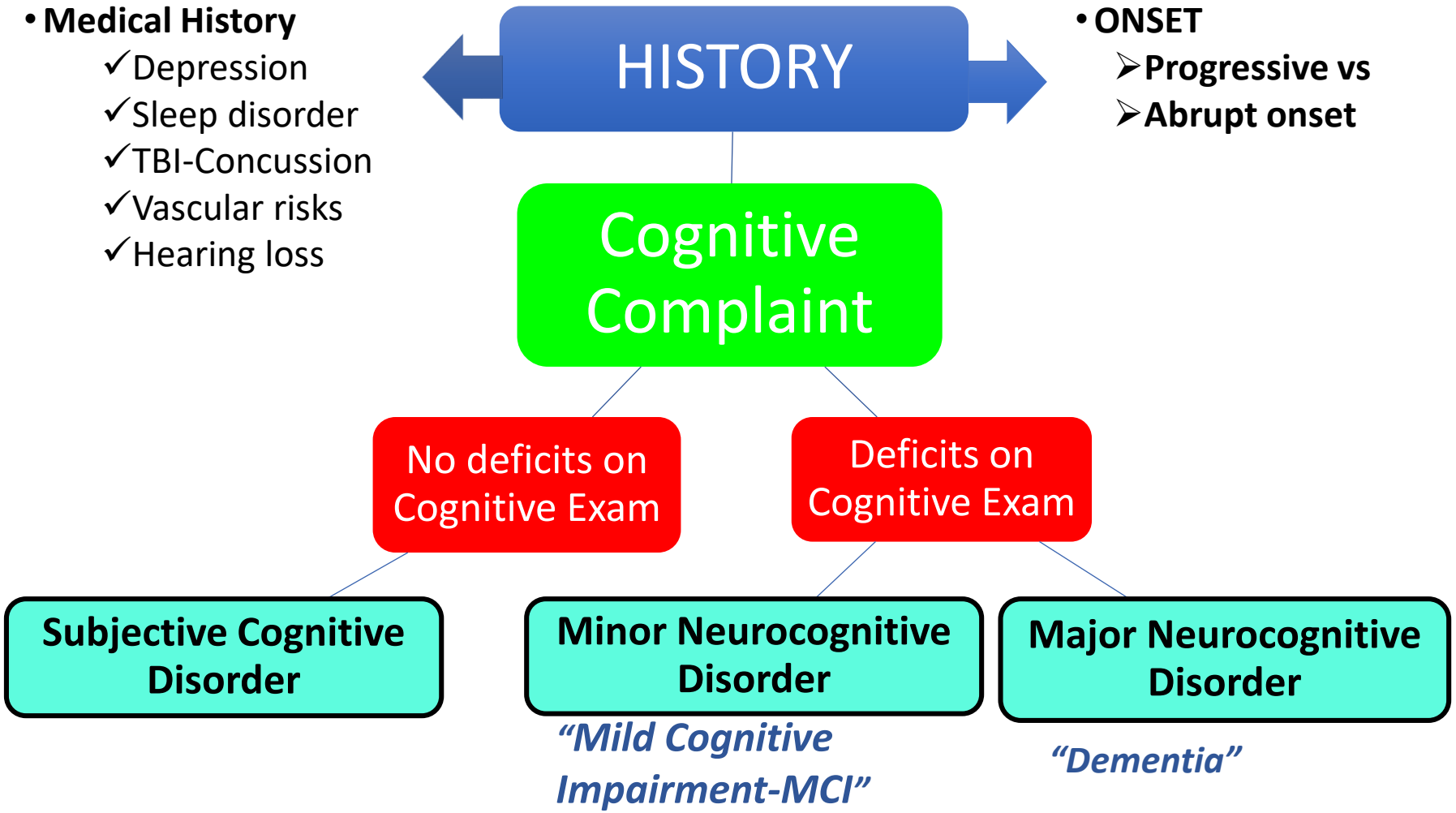
Health
- Manage Chronic Medical Conditions
- Treat Acute Risks

Early Treatment
- Baseline Screening
- Disease Modifying Drugs

https://alzheimers.org.nz/about-dementia/reducing-the-risk/


Diagnosis – Treatment

How to approach a patient with Cognitive Decline?



Diagnostic Studies

- **Laboratory Studies**
  - B12/folate, Vitamin D, Thyroid panel, Syphilis Serology [VDRL]
- **Structural Brain Imaging**
  - MRI Brain scan or CT brain [if contraindicated]
- **Electroencephalography [EEG]**
- **Other Diagnostic studies - Biomarkers**
  - PET imaging – Amyloid, Tau, Dopamine
  - CSF Studies

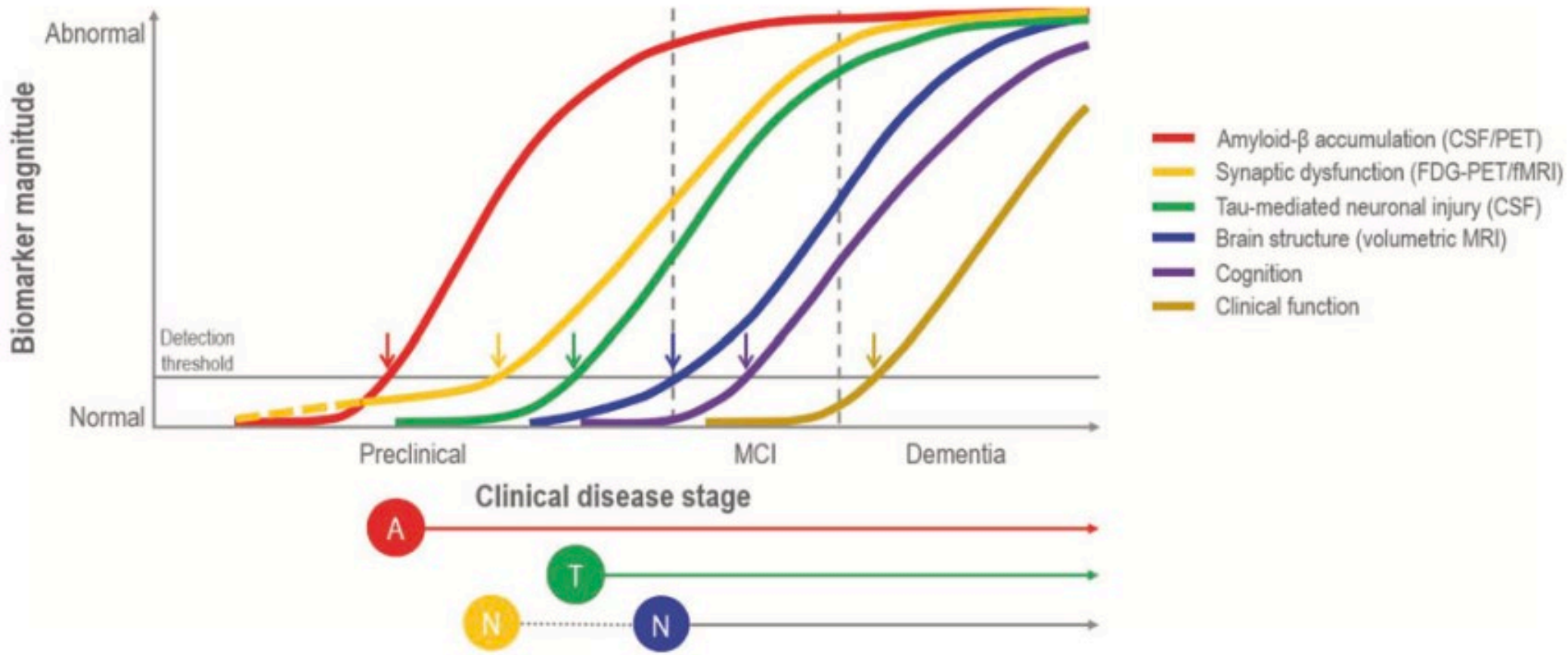
Evidence-Based Support for Earlier Detection of Alzheimer's Risk

- Emerging Classification Schemas based on the use of “biomarkers”
  - CSF profile of AD risk
  - Molecular Imaging with PET Scan Amyloid & Tau
- The idea is that individuals will be diagnosed before the onset of cognitive decline
  - Earlier detection will lead to earlier treatment with emerging immunotherapy drugs that target AD cellular pathology (Amyloid & Tau)
  - Earlier diagnosis & treatment should delay symptom onset

AT(N) System Classification of Alzheimer's Disease

- **The AT(N) system categorizes individuals using biomarkers that chart core AD pathophysiological features**
  - Amyloid-β (Aβ) pathway (A)
  - Tau-mediated pathophysiology (T)
  - Neurodegeneration (N)
- **This biomarker matrix is expanding to ATX(N) system**
  - **X represents** *novel candidate biomarkers* for additional pathophysiological mechanisms including: *neuroimmune dysregulation, synaptic dysfunction and blood–brain barrier alterations*

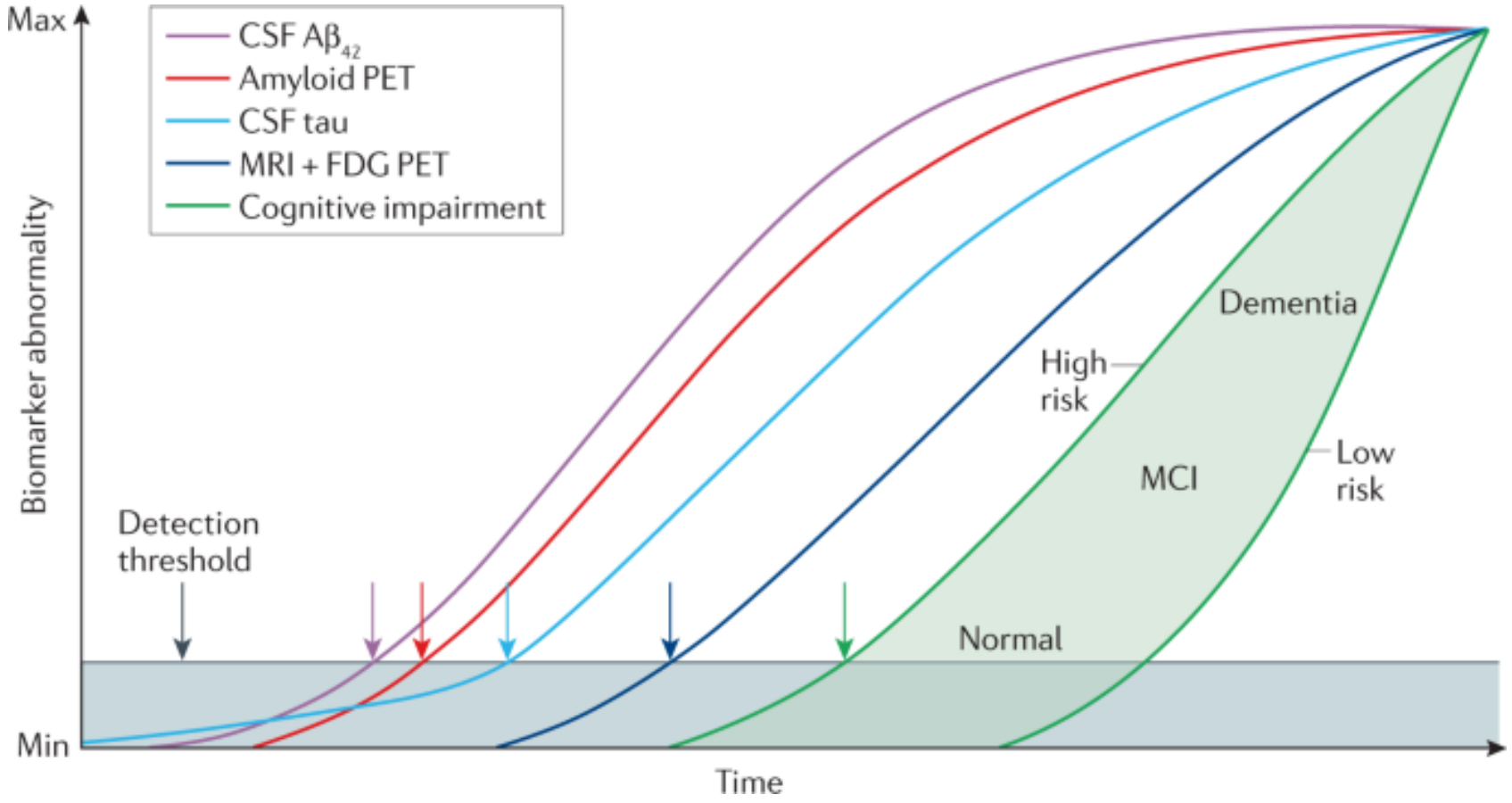
References: Hampel et. al. (2021) Developing the ATX(N) classification for use across the Alzheimer disease continuum. Nature Reviews Neurology. 17: 580-589.



Amyloid-*β* Pathway in Alzheimer's Disease

- **Reference: Hampel et. al. (2021) The Amyloid-*β* Pathway in Alzheimer's Disease. Molecular Psychiatry. 25: 5481-5503**.

AT(N) System Classification of Alzheimer's Disease



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PERSPECTIVE
https://doi.org/10.1038/s43587-022-00269-x

nature aging

Check for updates

NATURE AGING | VOL 2 | AUGUST 2022 | 692–703 |
www.nature.com/nataging

Designing the next-generation clinical care pathway for Alzheimer's disease

Harald Hampel[1]✉, Rhoda Au[2], Soeren Mattke[3], Wiesje M. van der Flier[4], Paul Aisen[5], Liana Apostolova[6], Christopher Chen[7], Min Cho[1], Susan De Santi[1], Peng Gao[1], Atsushi Iwata[8], Ricky Kurzman[1], Andrew J. Saykin[9], Stefan Teipel[10,11], Bruno Vellas[12], Andrea Vergallo[1], Huali Wang[13] and Jeffrey Cummings[14]

The reconceptualization of Alzheimer's disease (AD) as a clinical and biological construct has facilitated the development of biomarker-guided, pathway-based targeted therapies, many of which have reached late-stage development with the near-term potential to enter global clinical practice. These medical advances mark an unprecedented paradigm shift and requires an optimized global framework for clinical care pathways for AD. In this Perspective, we describe the blueprint for transitioning from the current, clinical symptom-focused and inherently late-stage diagnosis and management of AD to the next-generation pathway that incorporates biomarker-guided and digitally facilitated decision-making algorithms for risk stratification, early detection, timely diagnosis, and preventative or therapeutic interventions. We address critical and high-priority challenges, propose evidence-based strategic solutions, and emphasize that the perspectives of affected individuals and care partners need to be considered and integrated.

Biomarkers – Diagnosis before Cognitive Deficits

Table 1 | ATX(N) biomarkers and their contexts of use in Alzheimer's disease[5,8,9,136]

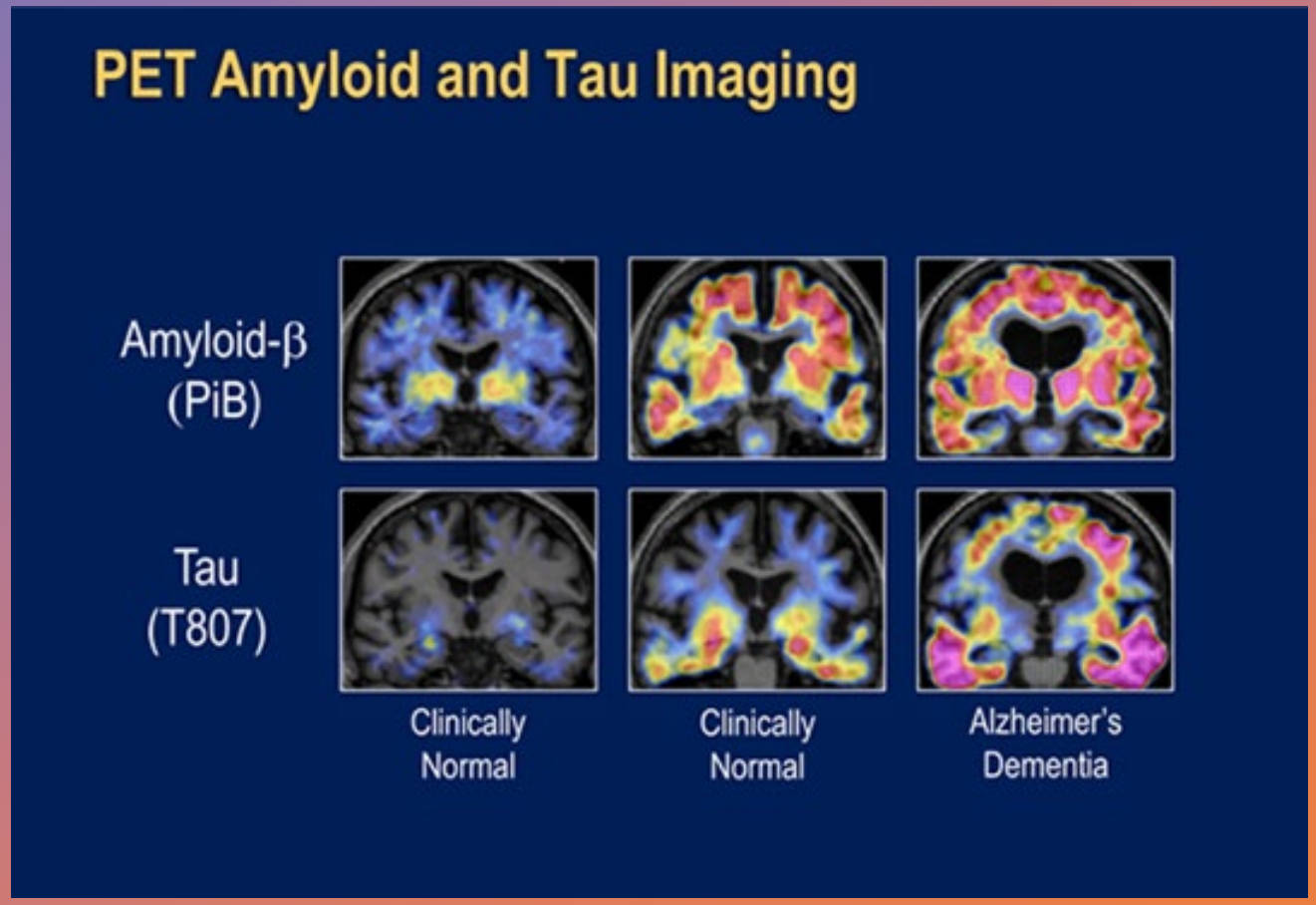
AT(N)	Imaging	CSF	Blood	FDA Class
A/amyloid	Amyloid PET	$A\beta_{42}$, $A\beta_{42}/A\beta_{40}$	$A\beta_{42}/A\beta_{40}$	Diagnostic monitoring
T/tau	Tau PET	p-tau_{181}, p-tau_{217}	p-tau_{181}, p-tau_{217}	Prognostic monitoring
N/neurodegeneration	MRI, FDG PET	NfL, tau	NfL, tau, GFAP	Pharmacodynamic monitoring
ATX(N) examples	SV2A PET, microglial PET, astrocytosis PET	Synaptic analytes, inflammatory measures	Synaptic analytes, inflammatory measures	Pharmacodynamic monitoring

The various biomarkers under the AT(N) system can be measured by neuroimaging or by detection in blood and CSF. ATX(N) demonstrates the dynamic and evolving nature of the AT(N) classification system where the X component represents additional biomarkers, for example, inflammatory biomarkers, that improve classification, based on the pathophysiology of disease.

Hampel et al. (2022) Designing the next-generation clinical care pathway for Alzheimer's disease. *Nature aging*. 2; 692-703.

PET Scan Methods *Molecular Imaging of Age-Related Changes*

Biomarkers of Disease



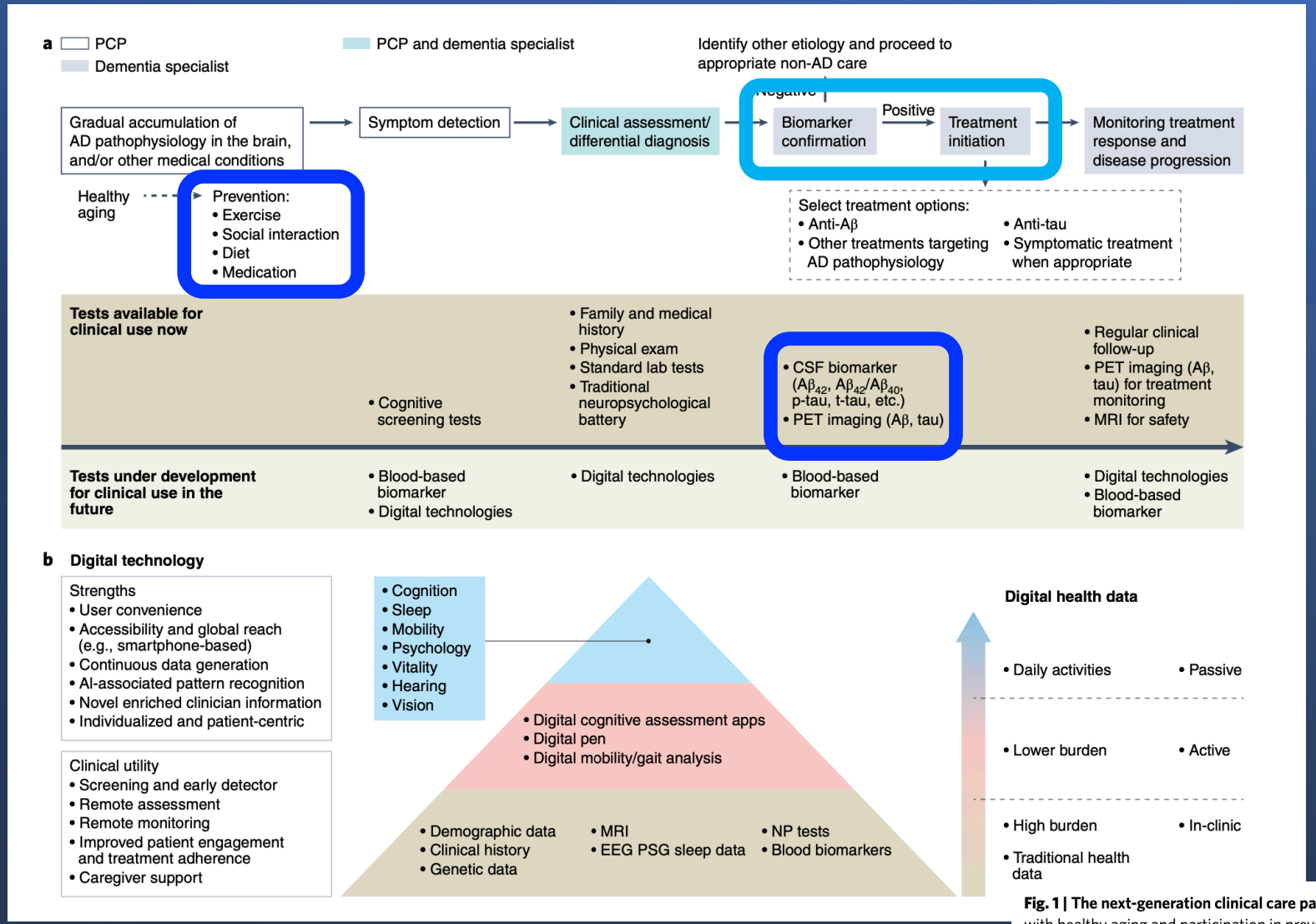
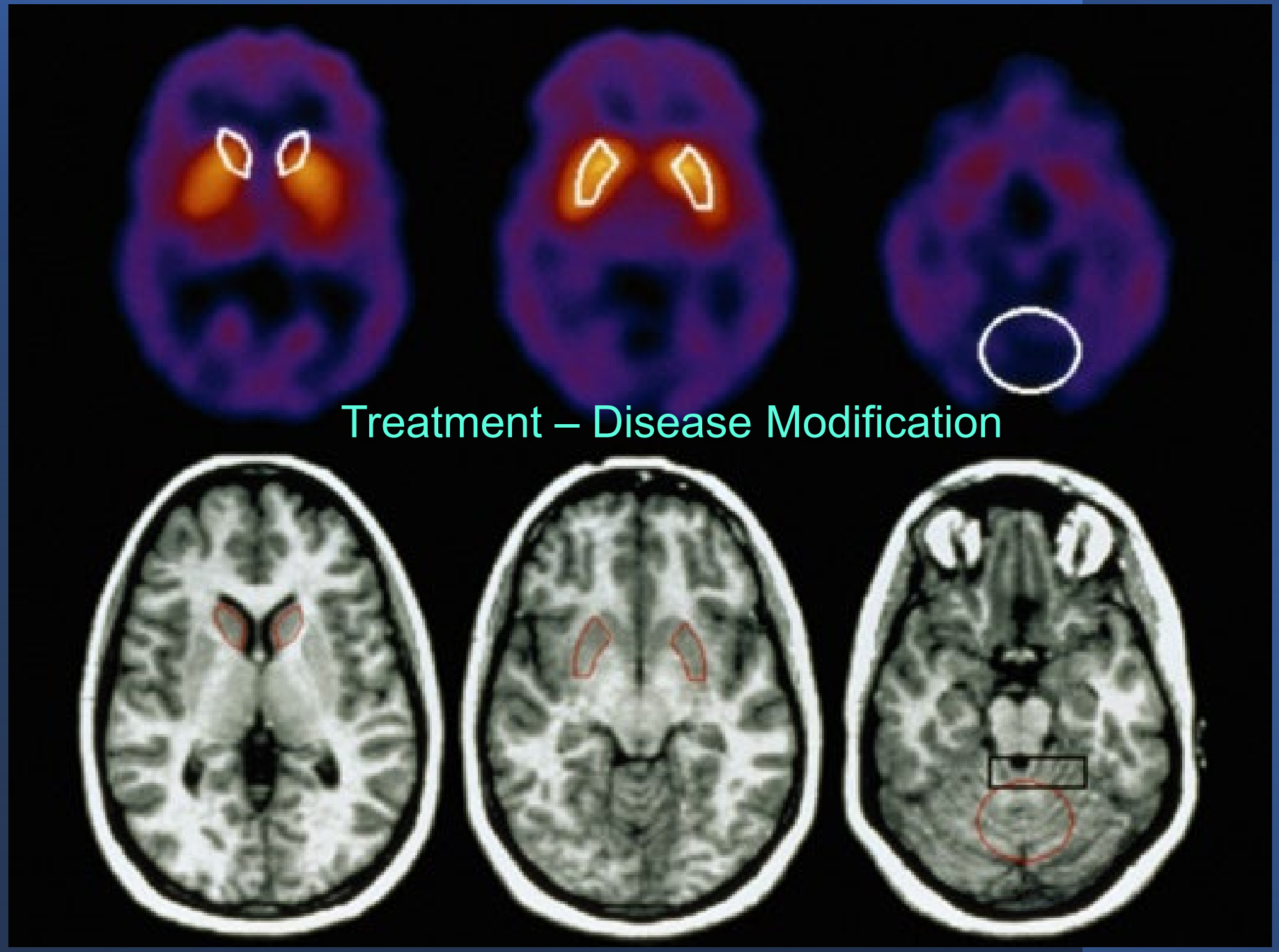
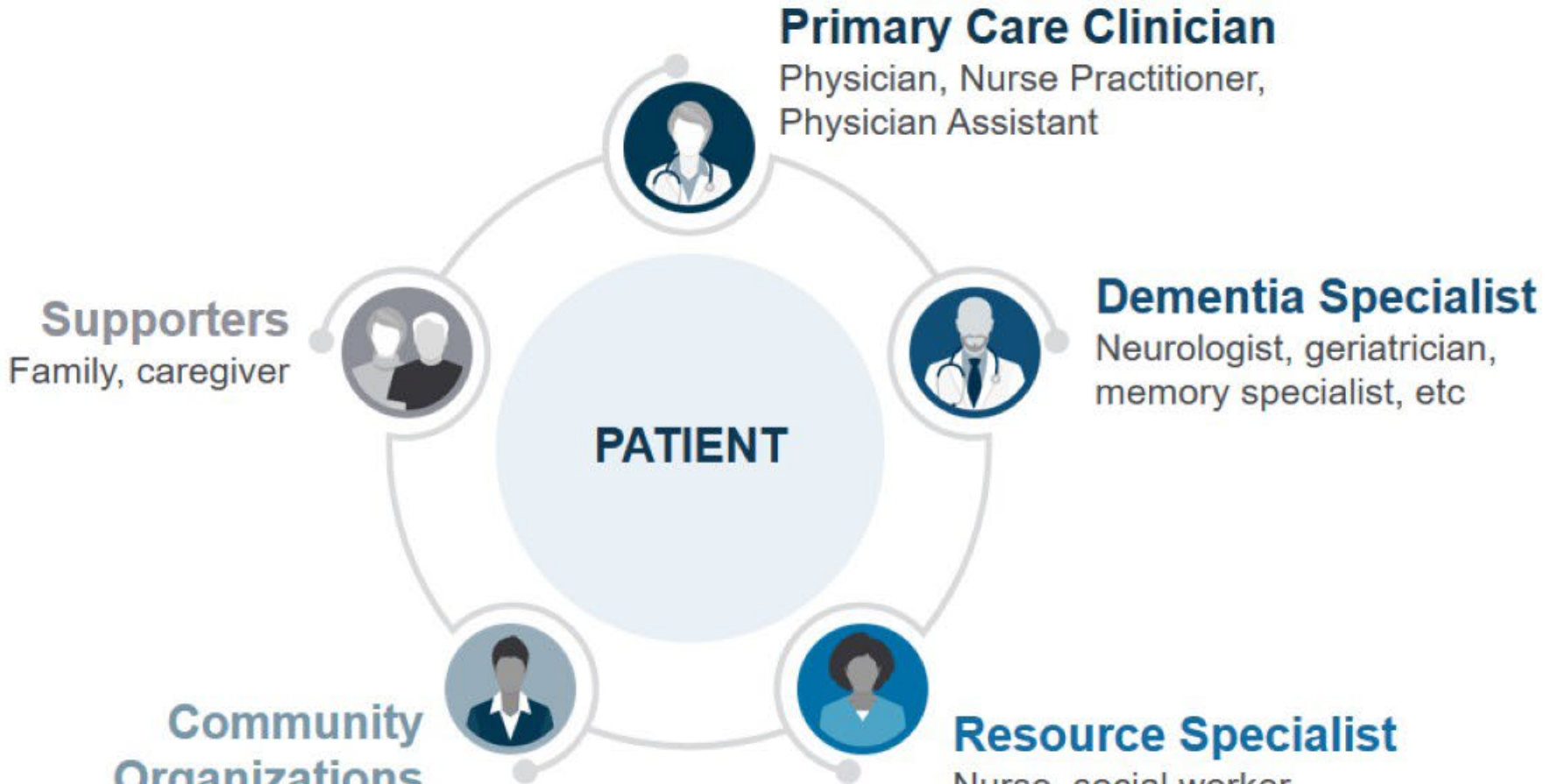


Fig. 1 | The next-generation clinical care pathway for Alzheimer's disease. a, An overarching illustration. The next-generation clinical care pathway begins with healthy aging and participation in preventive lifestyle measures to slow or prevent accumulation of AD pathophysiology, with the goal of extending healthspan across populations. Symptom detection, triggered by concerned individuals or family members, or detected during a routine wellness visit, may involve cognitive testing and, in the future, blood-based biomarkers and digitally based assessments. This will be accompanied by clinical assessments involving standard laboratory tests and physical examination. Any recorded cognitive impairment will be confirmed with standardized biomarker tests. Individuals with confirmed disease will proceed to treatment initiation with relevant AD therapy followed by long-term monitoring, of which digital technologies and blood-based biomarkers will play a key role in the future. **b**, Digital health technologies in future AD clinical care and the path toward a precision monitoring and detection platform. A precision monitoring and detection platform will require a transformation from the traditional data collection methods to the inclusion of digital technologies. This will include active engagement technologies that require individual interaction and engagement to passive engagement technologies that collect data in the background while the individuals keep to their daily routine. AI, artificial intelligence; EEG, electroencephalogram; NP, neuropsychiatric; PSG, polysomnography.


Treatment – Disease Modification

The Care Team

- Interprofessional, multidisciplinary team
- The exact makeup of the care team will differ by patient and by what is available in the PCP's locale



a. Galvin JE, et al. Front Neurol. 2021;11:592302; b. Expert opinion.

Addressing Other Causes of Cognitive Decline

Physical Examination

- Contributory comorbidities[a]
- Medication review[a]
- General health[a]
- Hypoglycemia[b]
- Hypotension[b]

Neurologic Examination[b]

- Signs of FTD, LBD, NPH, PD, or stroke
- Focal weakness
- Gait changes
- Neuropathy
- Psychotic features
- Speech, hearing, or vision issues

Laboratory Tests

- CBC count[a,c]
- Comprehensive metabolic panel[a,c]
- Thyroid function[a,c]
- Serum B12, folate[a]
- HIV[a,c]
- Rapid plasma reagin[a,c]

Structural Imaging

- MRI preferred (or CT)[c]
- Abnormalities like NPH, stroke, or tumor[b]
- Atrophy patterns[a]

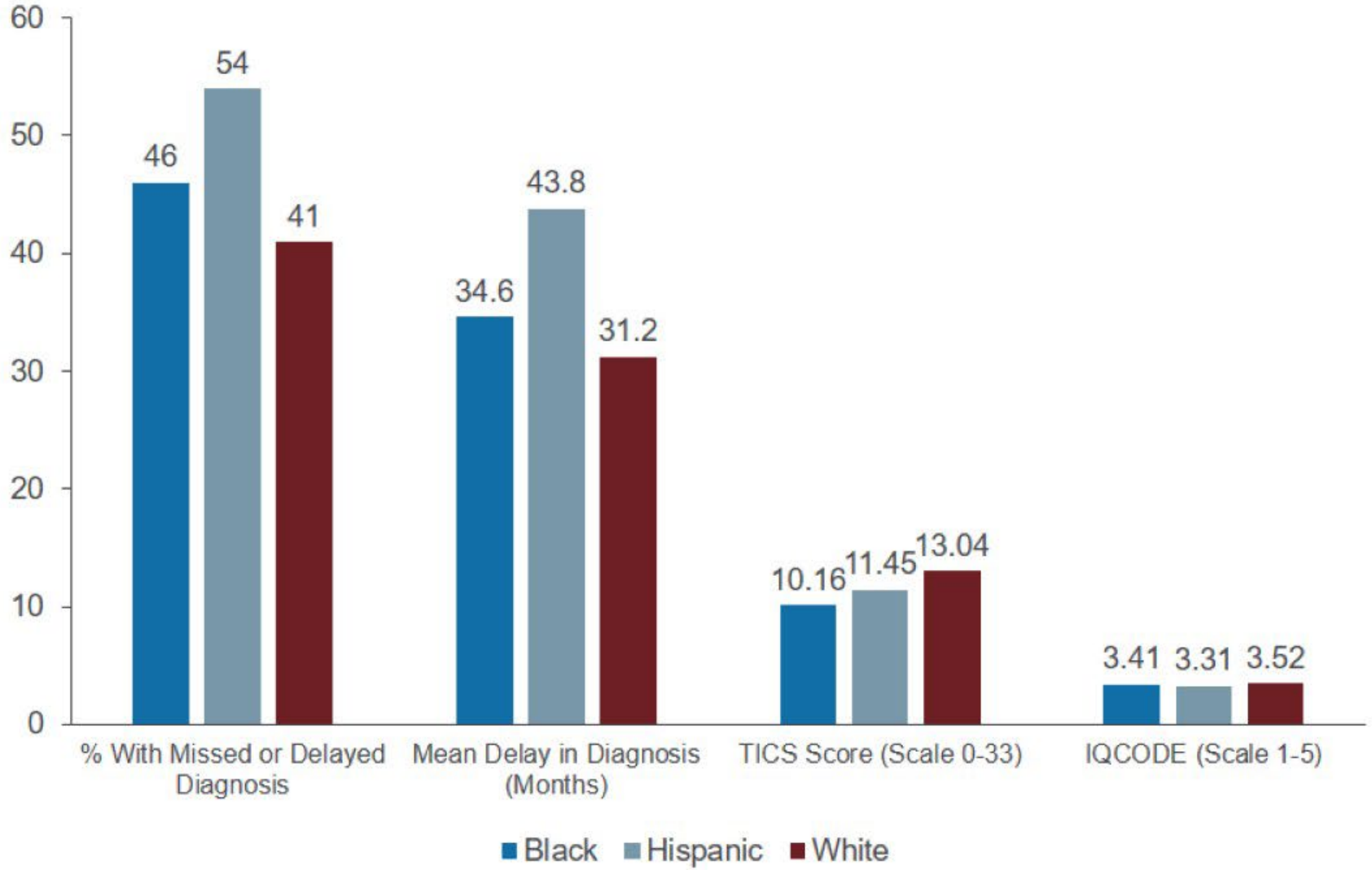
CBC, complete blood cell; CT, computed tomography; FTD, frontotemporal dementia; LBD, Lewy body dementia; MRI, magnetic resonance imaging; NPH, normal pressure hydrocephalus; PD, Parkinson disease.

a. Porsteinsson AP, et al. J Prev Alz Dis. 2021;3:371-386; b. Langa KM, et al. JAMA. 2014;312:2551-2561; c. Liss JL, et al. J Intern Med. 2021;290:310-334.

Missed or Delayed Diagnoses

Study based on Health and Retirement Study data

- More Black and Hispanic participants had a missed or delayed dementia diagnosis, compared with White participants
- Black and Hispanic patients showed poorer cognitive function and functional limitations at the time of diagnosis
- Overall, 24% of participants never received a dementia diagnosis
- Among Hispanic participants, that proportion was 32%



IQCODE, Informant Questionnaire on Cognitive Decline in the Elderly; TICS, Telephone Interview for Cognitive Status.
Lin PJ, et al. Med Care. 2021;59:679-686.

Expert Insights: A Major Shift in Thinking

"Alzheimer's disease" refers to pathologic change

NOT a specific syndrome

Alzheimer's disease is identified postmortem by pathologic changes or *in vivo by biomarkers*

Symptoms are part of the disease continuum

NOT part of its definition

Expert opinion from R. Petersen, MD

Biomarker Profiles

ATN Profile	Biomarker Category
A-T-N-	Normal AD biomarkers
A+T-N-	AD pathologic change
A+T-N+	AD and concomitant suspected non-AD pathologic change
A+T+N-	AD
A+T+N+	AD
A-T+N-	Non-AD pathologic change
A-T-N+	Non-AD pathologic change
A-T+N+	Non-AD pathologic change

AD Continuum

a. Lloret A, et al. Int J Mol Sci. 2019;20:5536; b. Jack Jr CR, et al. Alzheimers Dement. 2018;14:535-562.

FDA-Approved Drugs for Dementia

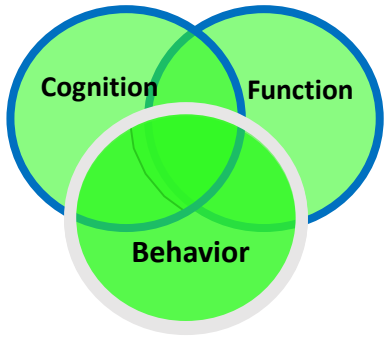
- Anti-AD pharmacotherapies approved by the US Food and Drug Administration
  - **Acetylcholinesterase inhibitors:** donepezil (Aricept), galantamine, and rivastigmine
  - **N-methyl-D-aspartate antagonist:** memantine (Namenda)
- These drugs provide *modest* but meaningful benefits
  - Mitigate symptoms, slow clinical progression, and delay functional disability.
- These drugs do *NOT* treat the underlying pathology

FDA-Approved Anti-Amyloid Drugs

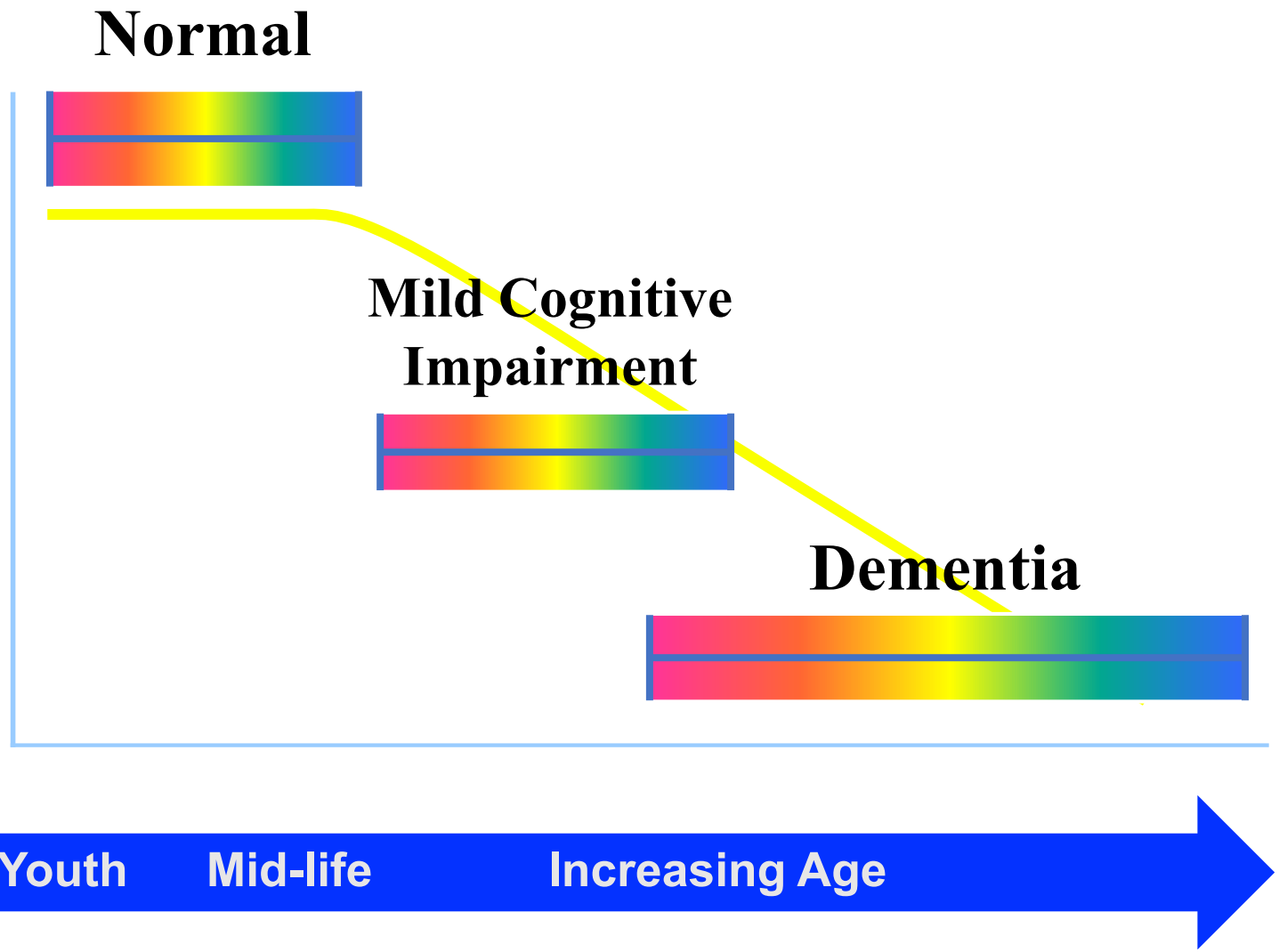
- **Amyloid plaques are a defining feature of Alzheimer's disease, disrupt cell-signaling, & lead to cell death.**
  - ✓ One hypothesis is that if you can get rid of these toxic plaques, you can keep the brain cells from dying and curb cognitive decline.
- **Two anti-amyloid drugs have had FDA-approval**
  - **Aducanumab (Aduhelm, Biogen/Eisai)** – no longer
  - **Lecanemab (Leqembi, Eisai)**
    - ✓ Both drugs are monoclonal antibodies designed to signal the immune system to clear amyloid plaques
    - ✓ Both drugs are administered via infusion therapy
    - ✓ Both drugs had fast-track approval
      - ➢ Current limitations: need for longitudinal study in larger diverse populations
      - ➢ Cost is prohibitive for many prospective patients

Brain Health – Healthy Brain Aging
Can you modify age-related brain changes?

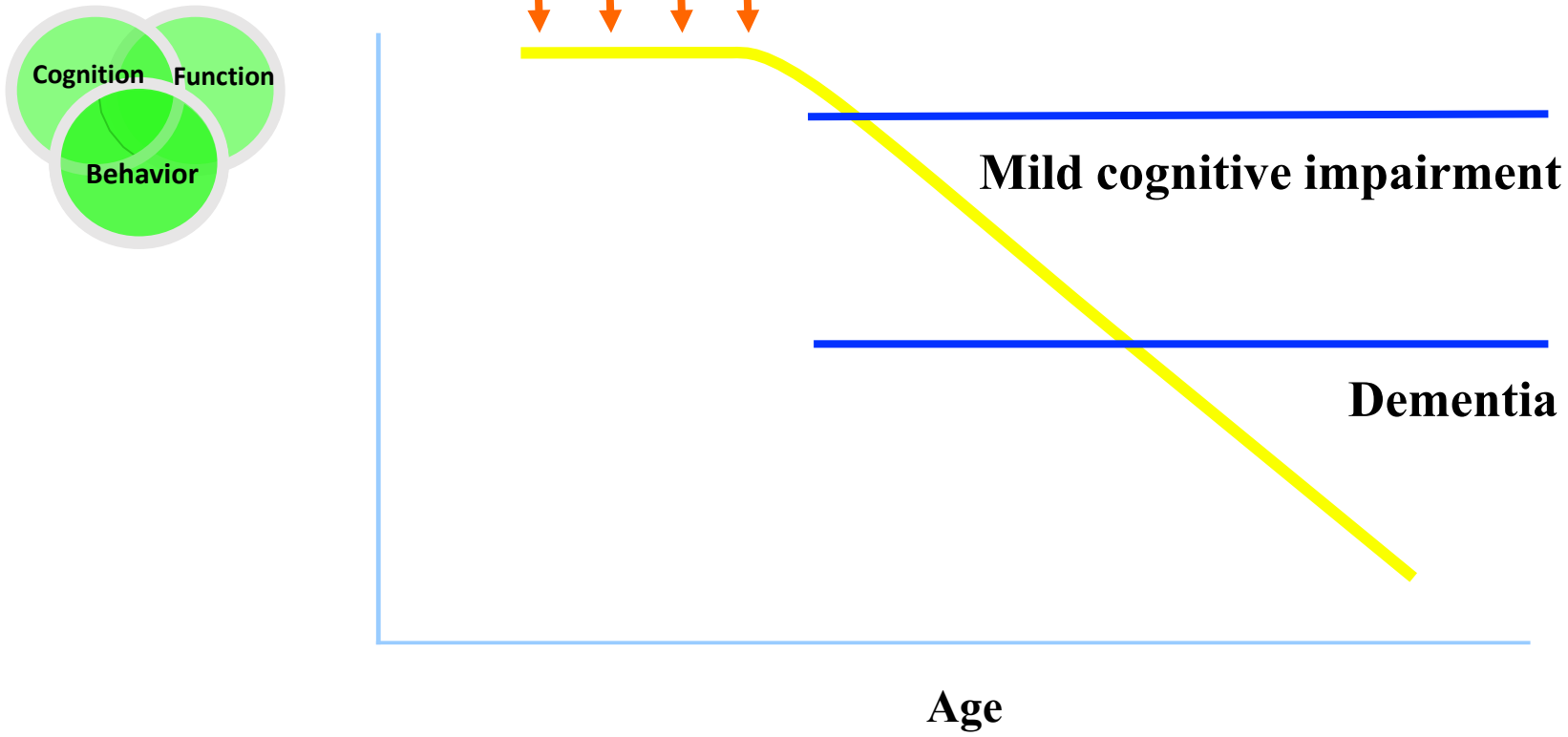
Petersen, RC. 2001



- Cognition
- Function
- Behavior



Brain Health – Healthy Brain Aging
Can intervention/Therapy alter brain aging?



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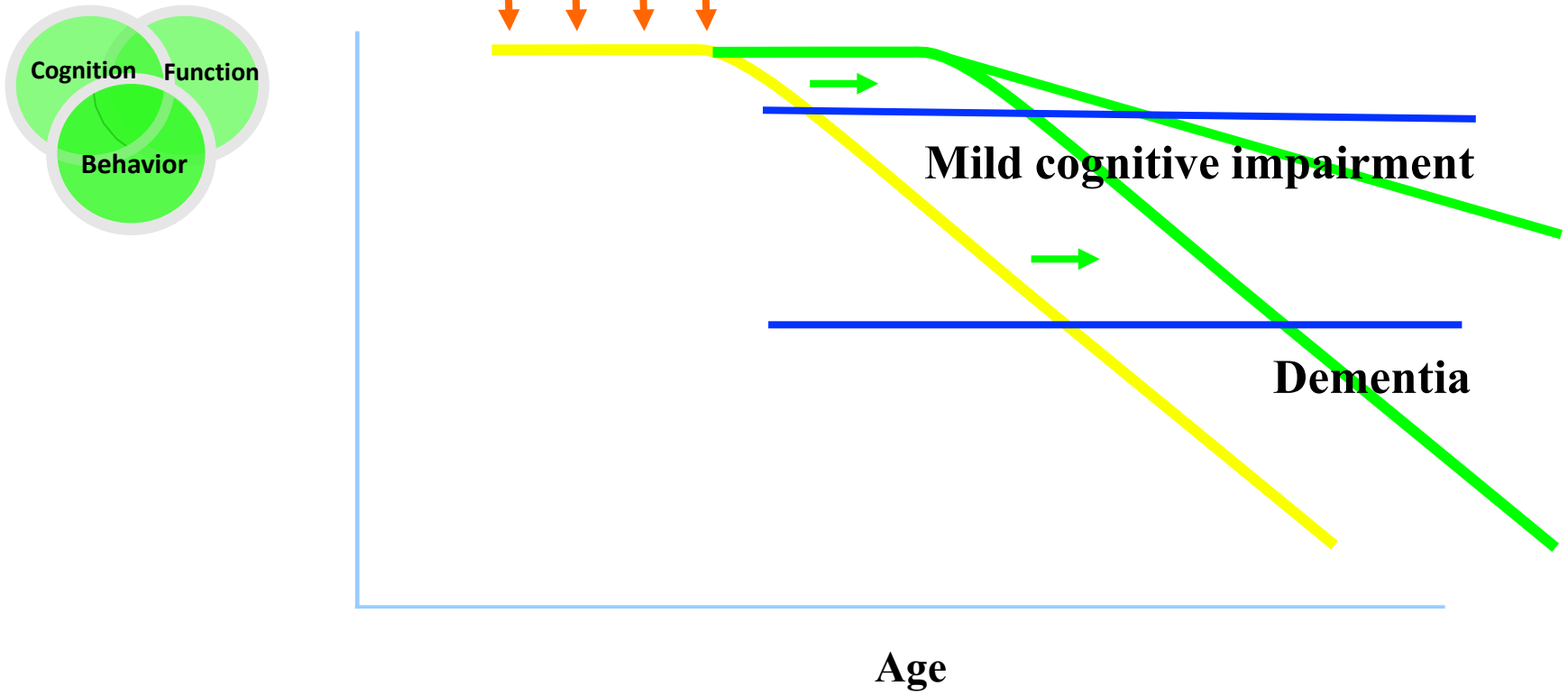
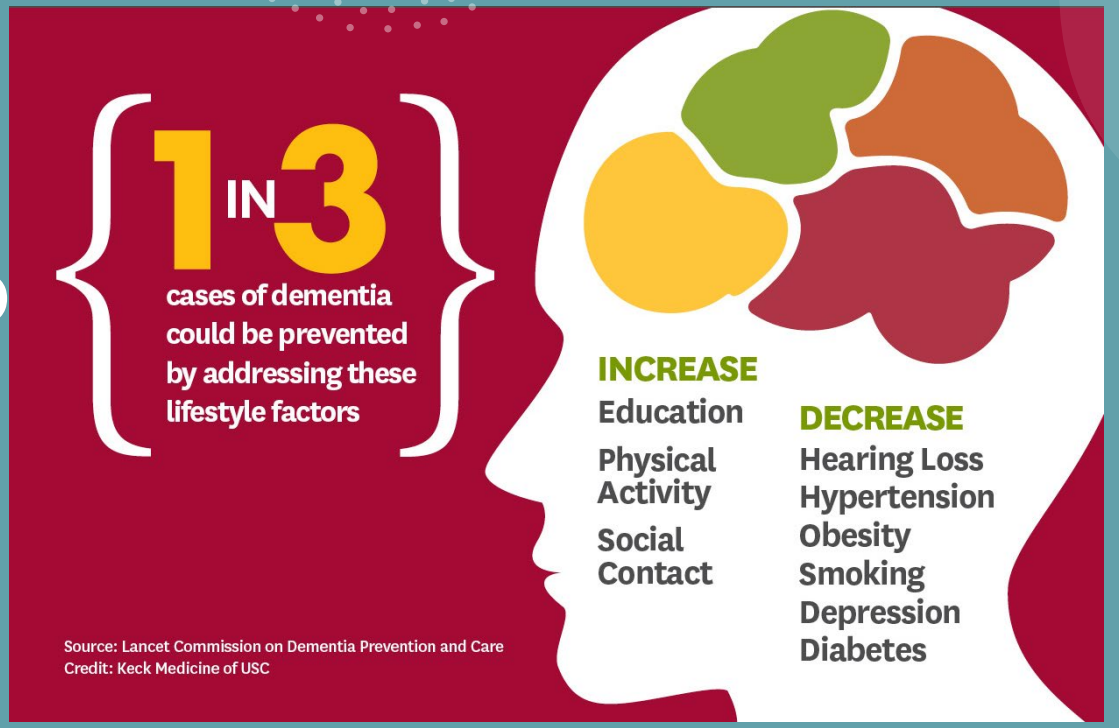
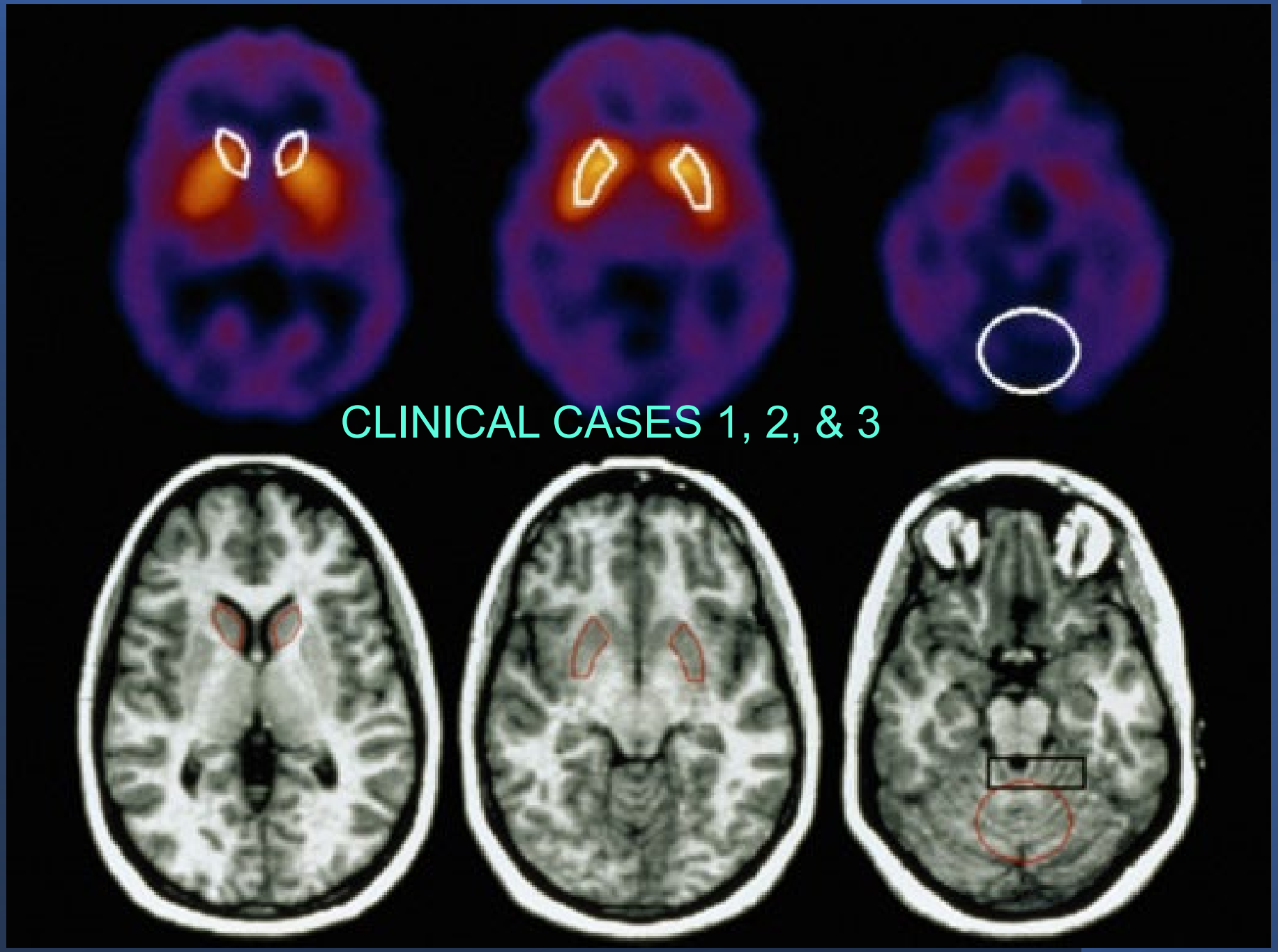


Innovative Memory Care
To promote brain health & Wellness

- Seek medical care early
  - Early diagnosis & treatment can improve outcome
  - Some causes of cognitive complaints are treatable!
  - Innovative therapies are emerging
    - Drug development to treat the underlying pathology
      - ✓ FDA-approved Anti-Amyloid infusions
      - ✓ Other drugs under development
    - Neural Stimulation to enhance brain function
      - ✓ Other innovative treatments
    - Supplements & Herbal therapy

How to promote healthy brain aging?




CLINICAL CASES 1, 2, & 3

Clinical Cases – Case 1

Chief Complaint: memory complaint

History of Present Illness: Mrs. Harris is a 71-year-old business owner who has been having trouble multi-tasking in the past 1-2 years. Her daughters are concerned about memory loss. She has had recent stressors. She is functionally independent.

Past Medical & Social History – unremarkable

Examination – Recall 2 of 3 words at 5 minutes, mild difficulty with serial 7s, no other cognitive deficits

Cranial nerves, Sensorimotor, Cerebellar, Gait & Station, DTRs intact, No Babinski response or pathological reflexes

Clinical Cases – Case 2

Chief Complaint: cognitive decline

History of Present Illness: Mrs. Lewis is a 59-year-old executive who has been having trouble learning new people's names. She often forgets about meetings that she arranges herself. Her ability to speak well is declining. She is functionally independent.

Past Medical & Social History – unremarkable

Examination – Delayed Recall 0 of 3 words, some word-finding pauses in conversation, no other cognitive deficits. Elemental neurological exam nonfocal.

Clinical Cases – Case 3

Chief Complaint: cognitive decline

History of Present Illness: Dr. Barnes is a 79-year-old Professor with a progressive cognitive decline. He has memory loss and word-finding difficulty. He stopped driving 1-year ago because he was getting lost. He moved into assisted living 2-years ago.

Past Medical & Social History – unremarkable

Examination – Recall 0 of 3 words at 5 minutes, impaired confrontation naming of low-frequency words, difficulty copying a complex figure. Elemental neurological examination nonfocal.

Clinical Cases – Diagnosis & Definitions

Case 1: **Subjective Cognitive Disorder (SCD)**

- *Cognitive complaint*
  - No objective cognitive deficits on exam
  - Functionally independent

Case 2: **Minor Neurocognitive Disorder**

- *Complains of Cognitive decline*
  - Cognitive deficits on exam
  - Functionally independent

Case 3: **Major Neurocognitive Disorder**

- *Cognitive Deficits, Functionally impaired* ***– Dementia***

Neurodegenerative Diseases
Alzheimer's Disease – Case 3

Alzheimer's Disease	***Cortical Degeneration***

Clinical Deficits

- Learning & Memory — Hippocampal formation; Acetycholine – *Nucleus basalis of Meynert*
- Cognitive deficits — Bilateral Parietal Cortex
  - ⑩ ***Right Parietal*** — ***Visuospatial & Visual Perception deficits***
  - ⑩ ***Left Parietal*** — ***Anomia & Apraxia***

Localization	Anatomical, Neurochemical

Pathophysiology	Diagnosis & Treatment

- ***Neurofibrillary tangles*** — ***Tau protein***
- ***Neuritic plaques*** — ***Beta-amyloid deposition***

Julie Knight, MS, MBA

Healthy Communities Manager, Alzheimer's and Dementia

Well-Ahead Louisiana

Louisiana Department of Health | Office of Public Health

Well-Ahead Louisiana

- Mission
  - Connecting Louisiana's Communities to a Healthier Future
- Vision
  - Reduce the burden of chronic disease and assure access to quality healthcare for all Louisiana residents

Objectives

- Provide an update on the recent legislation passed for Alzheimer's Disease and Related Dementias (ADRD)
- Understand the importance of prevention
- Identify risk factors associated with ADRD
- Examine risk reduction in prevention of ADRD
- Review current diagnosis and treatment in early detection of ADRD
- Addressing other causes of cognitive decline

LEGISLATIVE UPDATES

Legislation: Act 121

- **Creates the Alzheimer's and Related Dementias Advisory Council within the Louisiana Department of Health**
  - Governor appointed 22 Member Council
- Role of the Council
  - Conduct a review and assessment of the current status of Alzheimer's disease and other forms of dementia in this state
  - Review and submit recommendations of the existing five-year statewide plan to address Alzheimer's disease and related dementias
  - The Council shall submit the updated five-year statewide plan to the governor and the legislature every five years
  - Submit annual written report on progress of the five-year statewide plan

Current State Level Work

- Louisiana Alzheimer's Coalition
- Over **70** members from **50** stakeholder organizations
- Priority Areas:
  - Education & Empowerment
    - Risk reduction education: Healthy Aging, Heart Disease, Diabetes, and Smoking
  - Ensuring a Competent Workforce
    - Training the emerging workforce
  - Policies & Partnerships
    - Community-Clinical Linkages, Advocacy, Legislation
  - Monitor & Evaluate

Strengthening Louisiana's Response

ADRD Council

- Includes individuals with a wealth of information, resources, expertise, and connections
- Provide Recommendations for coalition formed workgroups/subcomittees
- Improve sustainability beyond grant funding

Louisiana Alzheimer's Coalition

- Execute its strategic plan to reduce the impact of Alzheimer's and related dementias
- responsible for accomplishing CDC-funded BOLD Grant deliverables (2023-2028)

Legislation: Act 73

- **Legislation (2021):**
  - ADRD Providers and Professionals
  - Purpose of Legislation
    - Increase the awareness of ADRD
    - Advising the Public of the value of Early Detection
    - Educating the public on the importance of identifying signs
    - Increasing data and surveillance

Legislation: Act 376

- **Requires support services for individuals with dementia**
  - Amend and reenact Act 73
  - Relative to support services for individuals with dementia
  - Provides for Alzheimer's and other dementia disease training
  - Requires the Louisiana Department of Health to educate healthcare providers on dementia services and care
    - Alzheimer's and other dementia diseases training in existing public health programs and services educate healthcare providers.

Louisiana BOLD Grant Award (2023-2028)

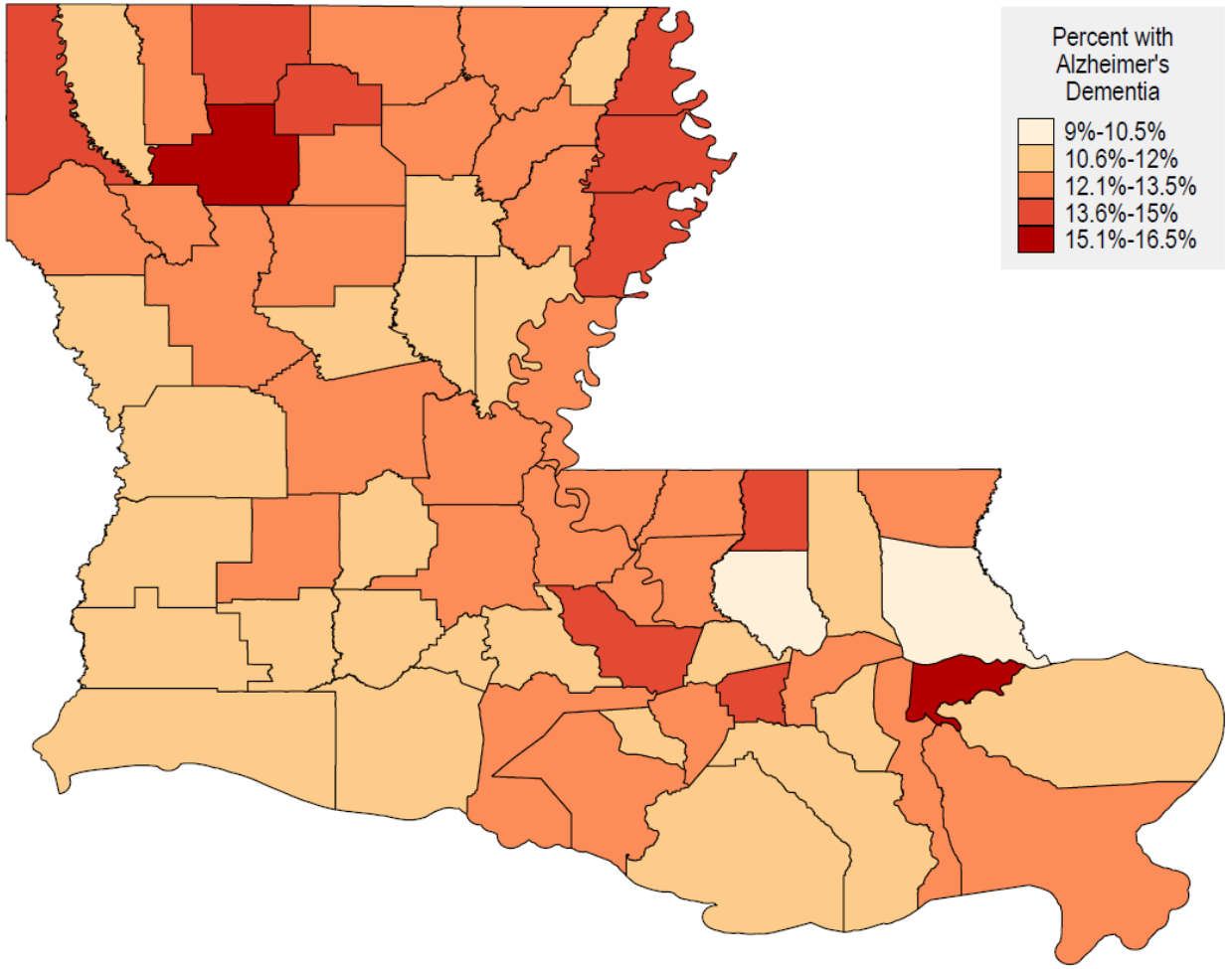
- Expand WAL Healthy Aging Program
- Increase awareness and understanding among the general public, providers, and other professionals of ADRD
- Educate the public and providers
- Address Social Determinates of Health to achieve healthy equity
- Establish community-clinical linkages
- Increase data collection efforts

Successes & Accomplishments

- 5-year ADRD State Plan titled: “Alzheimer’s Disease and Related Dementias State Plan 2023-2028”
- Healthy Aging Webpage Creation and Development
- Statewide Training Implemented
- Well-Ahead Louisiana Provider Trainings
  - ADRD ECHO (Extension for Community Healthcare Outcomes)
  - Launch July 16, 2024
- Provider, Family, & Caregiver Resources Developed

THE IMPORTANCE OF PREVENTION RISK FACTORS

Alzheimer's Prevalence in Louisiana, Age 65+



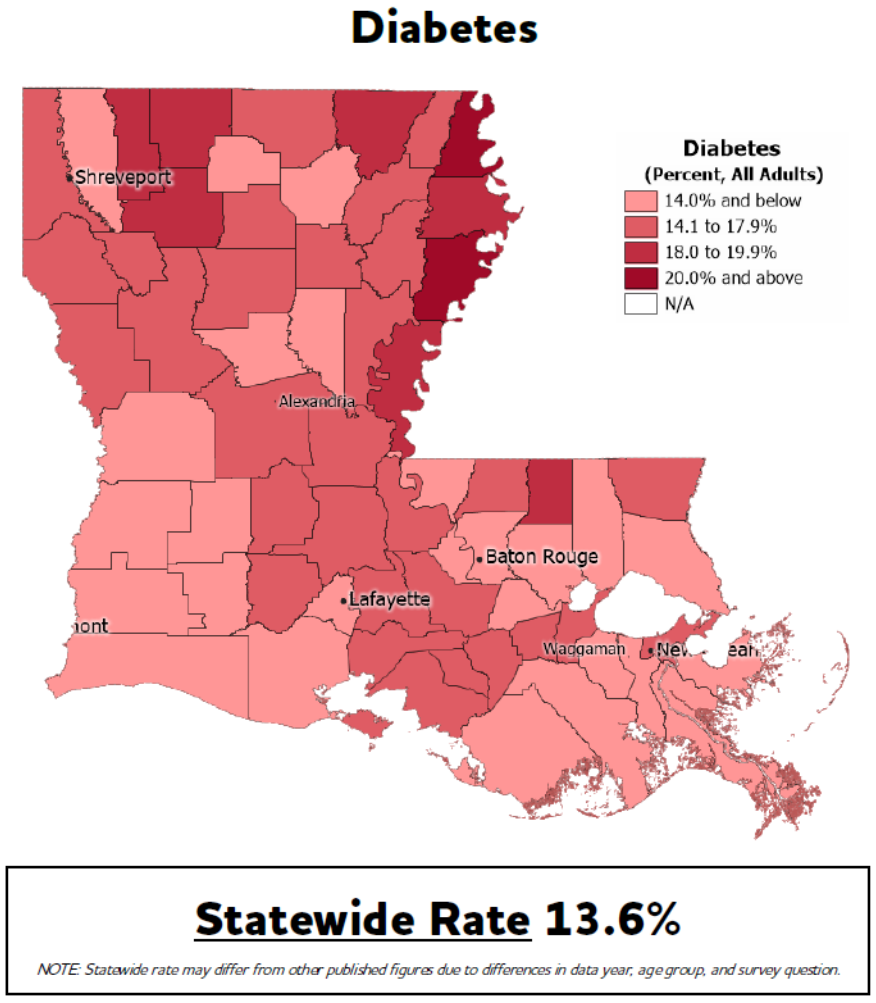
Source: Dhana et al., Alzheimer's & Dementia, 2023

Connection: Lifestyle and Alzheimer's Disease

- Most common modifiable risk factors: High Blood Pressure and Physical Inactivity
- Adults with Subjective Cognitive Decline likely to report at least 4 risk factors
- 25% of those with at least four risk factors reported cognitive decline
- Increased risk for African American, Hispanic, and American Indian or Alaska Native populations than other races and ethnicities.

Cognitive Decline Risk: Diabetes

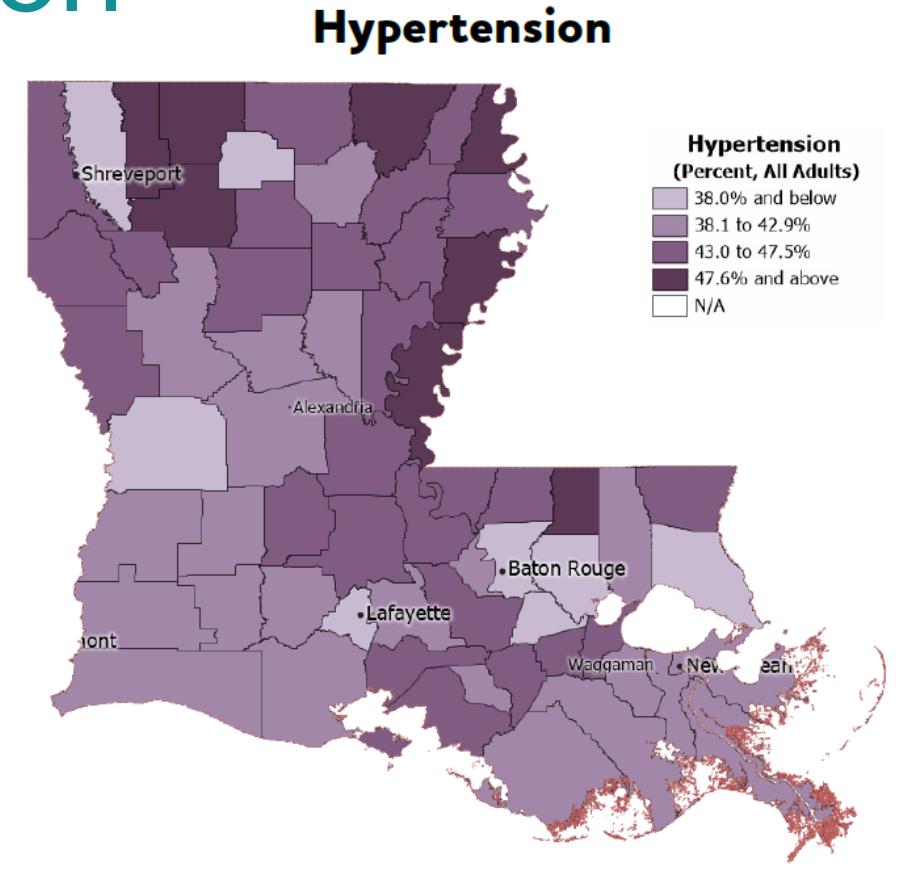
- Factors Contributing to Cognitive Decline:
  - High Blood Sugar
  - Insulin Resistance
  - Inflammation
  - Heart Disease



CDC Places, October 2023

Risk Factors for Cognitive Decline: Hypertension

- Factors Contributing to Cognitive Decline:
  - Vascular Cognitive Impairment
  - Alzheimer's Disease
  - Frontal Lobe Function



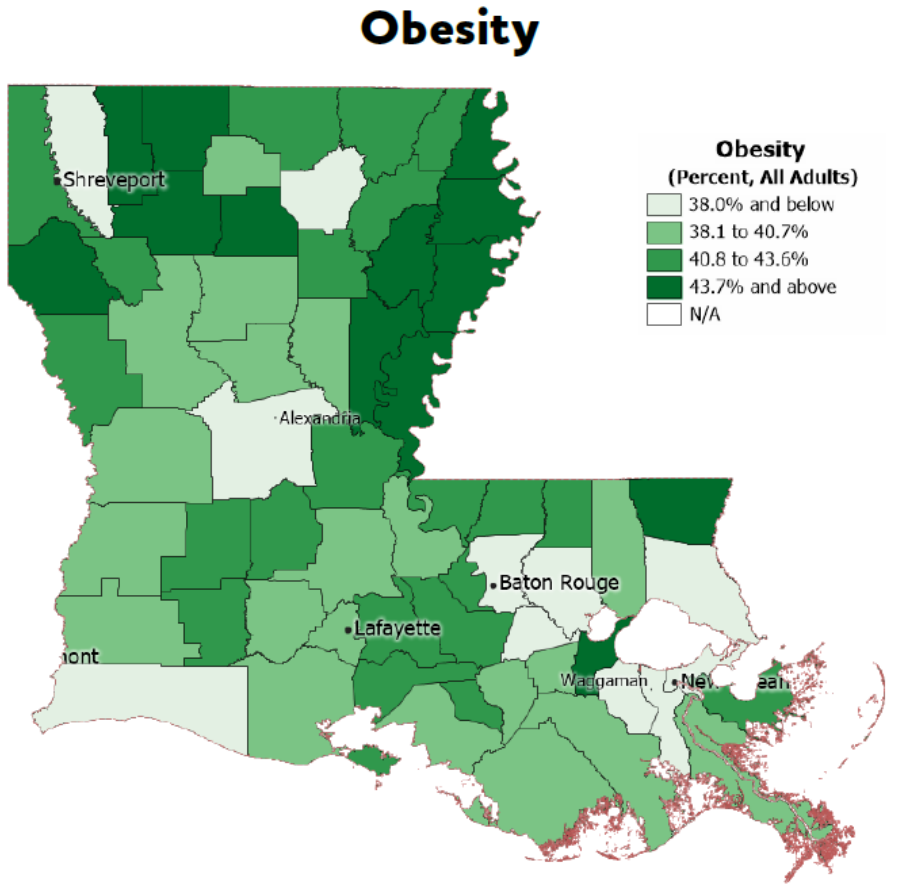
Statewide Rate 40.2%

NOTE: Statewide rate may differ from other published figures due to differences in data year, age group, and survey question.

CDC Places, October 2023

Risk Factors for Cognitive Decline: Obesity

- Factors Contributing to Cognitive Decline:
  - Obesity & metabolic disorders associated with poor cognitive performance
  - Poor adherence to medical recommendations
  - Poor behavior management

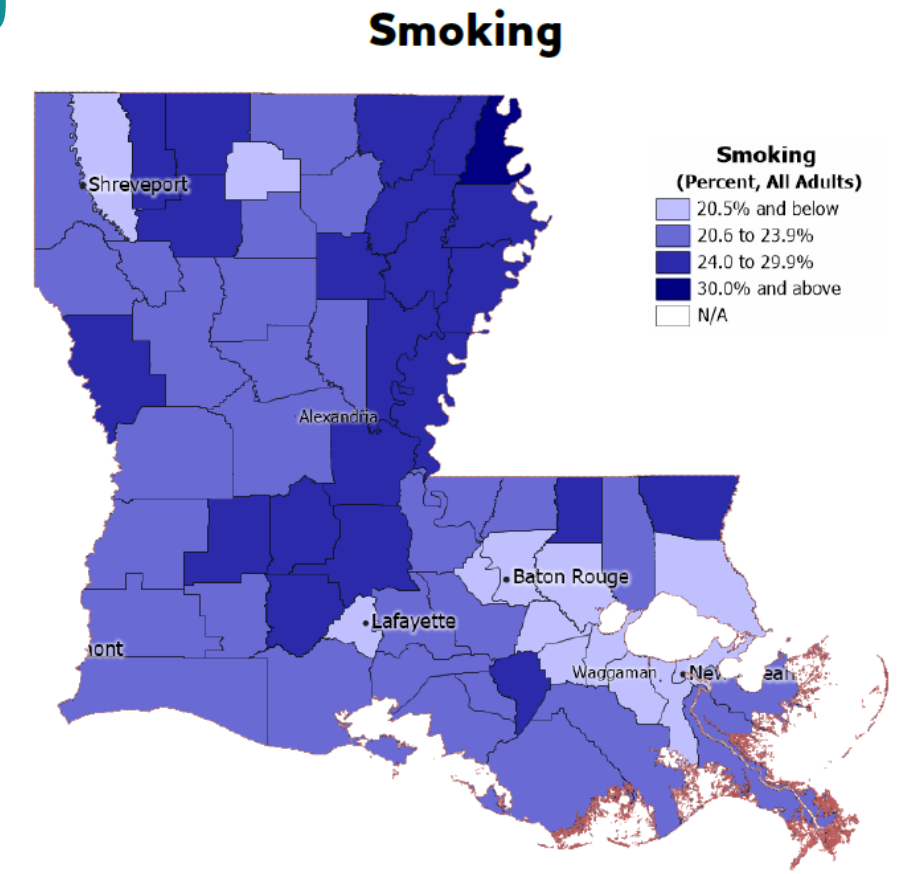


Statewide Rate 38.6%

NOTE: Statewide rate may differ from other published figures due to differences in data year, age group, and survey question.

Risk Factors for Cognitive Decline: Smoking

- Factors Contributing to Cognitive Decline:
  - Well-established risk factor for cognitive decline and dementia
  - Quitting smoking may reduce the risk of cognitive decline to levels similar to those of people who have never smoked

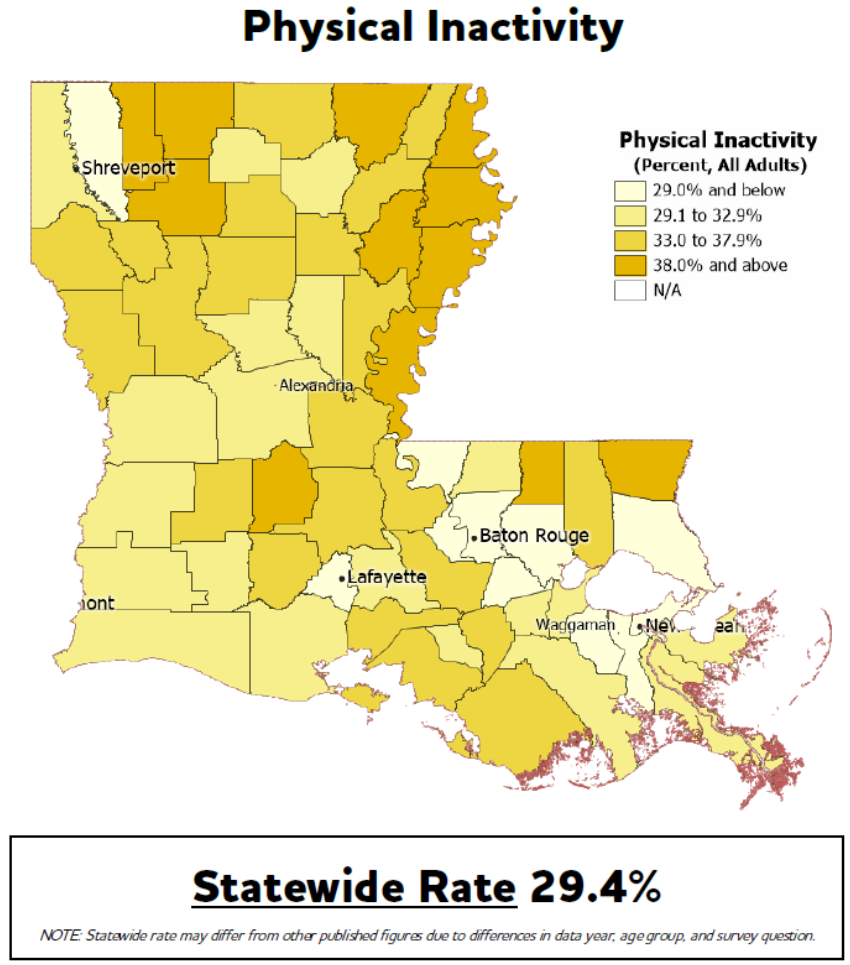


Statewide Rate 19.5%

NOTE: Statewide rate may differ from other published figures due to differences in data year, age group, and survey question.

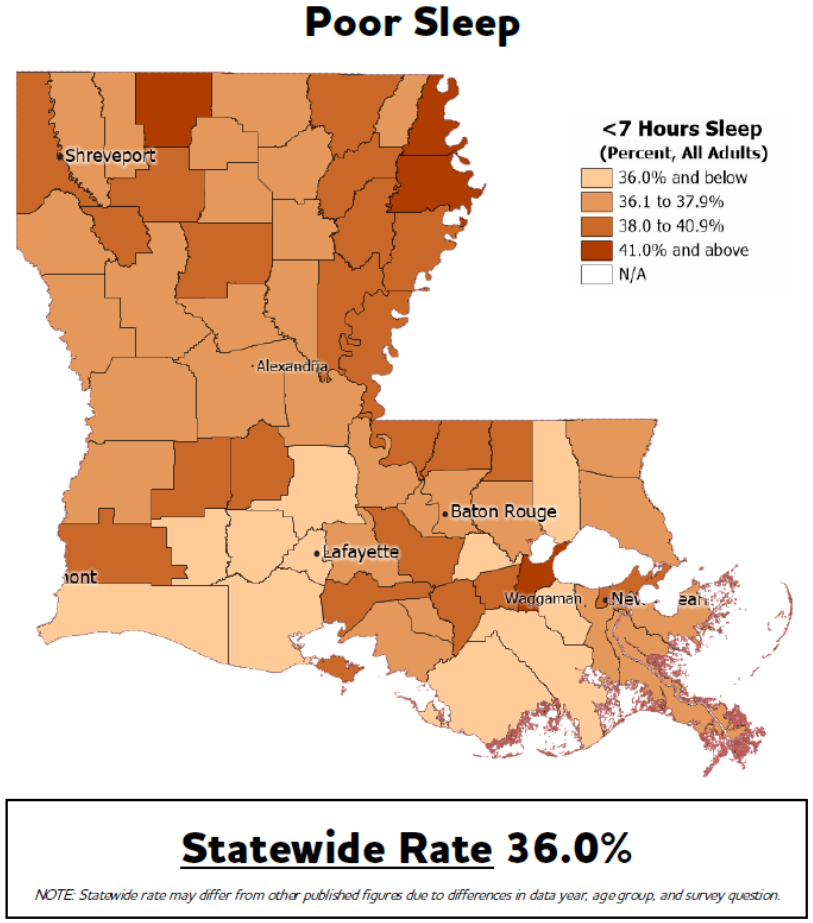
Risk Factors for Cognitive Decline: Physical Inactivity

- Factors Contributing to Cognitive Decline:
  - Sedentary behavior was significantly associated with an increased risk of cognitive decline or mild cognitive impairment in the elderly



Risk Factors for Cognitive Decline: Poor Sleep

- Factors Contributing to Cognitive Decline:
  - Sleep-initiation insomnia: Increase the risk of dementia by 51%
  - Sleep-medication usage: Increase the risk of dementia by 30%
  - Short sleep
  - High sleep variability:
  - Extreme sleep duration



QUESTIONS

WELL-AHEAD

Closing Remarks

AVIS RICHARD | BUREAU DIRECTOR

BUREAU OF CHRONIC DISEASE PREVENTION AND HEALTHCARE ACCESS

Office of Public Health | Louisiana Department of Health

WELL-AHEAD

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Thank You for Joining!

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